

~~Please amend the application as follows:~~

IN THE TITLE

Please replace the current title, "ROUTING METHOD AND APPARATUS THAT UTILIZE DIAGONAL ROUTES," with "METHOD AND APPARATUS FOR PRE-COMPUTING ATTRIBUTES OF ROUTES."

IN THE SPECIFICATION

Please delete the "Claim of Benefit to Prior Application" on page 1, lines 1-11, and insert therein a new Claim of Benefit to Prior Applications as follows:

--CLAIM OF BENEFIT TO PRIOR APPLICATIONS

This application is a continuation application of United States Patent Application entitled "Routing Method and Apparatus that Utilize Diagonal Routes," filed on December 7, 2001, and having serial number 10/013,819. This patent application also claims the benefit of the earlier-filed U.S. Provisional Patent Application entitled "Method and Apparatus that Utilize Diagonal Routes", having serial number 60/325,748, and filed 1/19/2001; U.S. Provisional Patent Application entitled "Routing Method and Apparatus", having serial number 60/314,580, and filed 8/23/2000; and U.S. Provisional Patent Application entitled "Routing Method and Apparatus", having serial number 60/337,504, and filed 12/6/2001--

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Please delete the "Field of the Invention" on page 1, lines 10-12, and insert therein
a new Field of the Invention as follows:

--FIELD OF THE INVENTION

The invention provides method and apparatus for pre-computing attributes
of routes.--

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On page 5, lines 1-8, please delete the "Summary of the Invention", and insert
therein a new Summary of the Invention as follows:

--SUMMARY OF THE INVENTION

Some embodiments provide a method of pre-computing attributes of routes for
nets in a region of a design layout. The pre-computed attributes are used by an electronic
design automation application that partitions a design-layout region into a plurality of
sub-region.

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In some embodiments, a number of edges exist between the sub-regions. In these
embodiments, the method identifies a first set of potential routes for a first set of sub-
regions. Each route in the first set traverses the first set of sub-regions. For each
particular edge between the sub-regions, the method identifies an edge-intersect cost that
is dependent on the number of routes in the first set of routes that intersect the particular
edge. Different embodiments define different edge-intersect costs. For instance, the
edge-intersect cost of a particular edge (1) can be the number of first-set routes that

intersect the particular edge, (2) can be an edge-intersect probability that equals the number of first-set routes that intersect the particular edge divided by the total number of first-set routes, or (3) can be a cost derived from the edge-intersect probability. Other embodiments might define other edge-intersect costs. The method stores each identified edge-intersect cost for the first set of sub-regions.

In other embodiments, a number of paths exist between the sub-regions. In these embodiments, the method identifies a first set of potential routes for a first set of sub-regions. Each route in the first set traverses the first set of sub-regions. For each particular path between the sub-regions, the method identifies a path-use cost that is dependent on the number of routes in the first set of routes that use the particular path. Different embodiments define different path-use costs. For instance, the path-use cost of a particular path (1) can be the number of first-set routes that use the particular path, (2) can be a path-use probability that equals the number of first-set routes that use the particular path divided by the total number of first-set routes, or (3) can be a cost derived from the path-use probability. Other embodiments might define other path-use costs. The method stores each identified path-use cost for the first set of sub-regions.--

IN THE CLAIMS

Please cancel claims 1-26.

Please add the following claims 27-38.